



Basic Radon Information Summary

- Many lung cancer victims never smoked tobacco products - and were never around second-hand smoke. Their lung cancers have been scientifically proven to have originated from radon gas exposure. Radon is odorless and colorless. It is estimated that 21,000 people die each year in the U.S. from lung cancer caused by radon. Radon-induced lung cancer is highly preventable.
- Radon gas is present throughout the U.S. Radon comes from the natural radioactive decay of uranium. It is estimated that the top 6 feet of soil for an average acre of land contains about 50 lbs. of uranium. Radon gas enters homes and radioactively decays - creating radon decay products (RDPs). RDPs are carried by dust, cigarette smoke, etc. - deep into our lungs where they emit alpha particles (a type of radiation) that damage our DNA - causing lung cancer.
- Radon gas enters homes through tiny (hair-like) pores in concrete slabs and basement walls. As air tends to rise in homes (especially in the winter-time). This air movement (chimney-effect) draws radon into homes. When the outside ground is frozen, has a snow-cover or is saturated with water - a "lid" is created over the ground outside - so radon more easily enters our homes. Wintertime radon gas levels measured in homes are often double summertime levels.
- Radon gas is very common within areas of the BRHD's jurisdiction. US-EPA recommends corrective action when radon gas (year-round average) measures at or above 4pCi/L (units pronounced "pea-co-cure-ease" per liter). Many homes in Box Elder, Cache and Rich counties have tested much higher than 4pCi/L. The % of homes over 4pCi/L (as of July 2014 for people who used Utah DEQ radon test kits) are: Box Elder = 59.0%, Cache = 50.3% and Rich = 59.1%). Highest radon levels found: Box Elder = 71.1pCi/L, Cache = 152.5pCi/L and Rich = 30.8pCi/L.
- Homes next door to each other can have very different levels of radon (due to differing geology beneath every home). Testing of bare ground for radon before building a home is impossible (see RRNC info for new homes on next/back page). Everyone needs to test for radon gas in existing homes. Testing is the only way to know if dangerous levels of radon are present.
- Bear River Health Department is now selling Utah DEQ \$8 (BRHD's cost) easy to use short-term radon test kits at 4 BRHD offices: **North Logan** (85 E. 1800 N.); **Brigham City** (992 S. 88 W.); **Tremonton** (440 W. 600 N.) and **Randolph** (275 N. Main Street). These (and other radon kits) may also be ordered on-line through the Utah DEQ radon web-site: www.radon.utah.gov.

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- The most common way to stop radon gas from entering homes is “sub-slab depressurization.” With SSDP - a diamond-bit is used to drill a 3” or 4” hole into and to below the concrete slab. About 5 gal. of soil (sand/gravel) is excavated. Then, 3” or 4” PVC piping is sealed in the hole and connected so that radon vents above the roof. SSDP creates a pathway of least resistance for radon to exit soil beneath homes (so only a tiny amount of radon enters homes). A fan may be connected to increase flow (about 5-10 cents/day). SSDP systems cost about \$1,200-\$1,500.
- BRHD recommends that homeowners considering radon mitigation get several competitive bids from radon mitigators - and to only use currently certified National Radon Proficiency Program (NRPP) radon mitigators (see current list at www.radon.utah.gov.) Many NRPP mitigators will warranty that radon in mitigated homes will not exceed 2.7pCi/L for 15 years (or longer) – including the warranty being transferable to new owners for the life of the warranty.
- The modern and smart way to prevent radon gas from entering a new home is to build-in radon resistant new construction (RRNC) features. With trained mitigators in the construction crew, RRNC costs can be 1/2 the cost of doing mitigation. RRNC can be more efficient and attractive (with pipes carrying radon completely hidden under concrete and inside walls). Because of high radon levels in almost every community within BRHD’s jurisdiction, BRHD strongly encourages everyone building a new home to consider installing RRNC features in it. (Please go to www.radon.utah.gov to watch a short video showing how RRNC is installed.)
- Home buyers are increasingly asking for radon mitigated homes (radon <4pCi/L). And with new construction, more people are asking their builders to install RRNC features. When such mitigated/RRNC homes are sold, people are often getting their mitigation/RRNC costs back.
- Older homes are often drafty (poor insulation, cracks, open windows, evaporative coolers); and such conditions allow outdoor air to dilute radon levels. Newer homes are often very energy efficient (“tight” - more insulation, less cracks and AC) - which keeps more radon inside homes.
- Please contact Mark Stevens-BRHD (435-792-6578) for radon information/answers to your questions. And view current radon test results for your community, and find other useful radon info at: www.brhd.org (Scroll down/click on Environmental Health, and then click on Radon.)
- Please go to www.epa.gov/radon for many extensive radon information guides. You will also see radon research references documenting how radon has been scientifically proven to cause approximately 21,000 lung cancer deaths in the U.S. each year. Most of these deaths could have been prevented with radon mitigation (<4pCi/L) - or with RRNC features in new homes.